

IEEE VTS NEWS DIGEST

Connecting the Mobile World

Companion to VTS News, Volume 48, Issue 2 May 2001

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Short articles are available on-line. For longer articles, only the abstract is available on-line. VTS News is sent to all VTS members, and is included in the society subscription. Non-VTS members can subscribe at a cost of \$30 per year. For details of this, or for pricing information of single copies, contact the IEEE Customer Service on 1-800-678-IEEE (USA and Canada), +1 732-981-1393 (outside USA and Canada), and FAX: +1 732-981-0027

Foreword

James Irvine, Editor

In this issue we feature two very different technology areas which have some interesting commercial parallels.

The first is mobile data for existing digital cellular systems. While there is a lot of talk of data services for third generation (3G) systems, Internet access is possible today with i-mode and WAP being the main technologies. i-mode has been extremely successful, signing up over 20 million customers in Japan in little over two years. WAP has been less successful, although the comparison is not exactly fair, since messaging services are included in i-mode but are provided by a separate, very successful, SMS service if GSM is used for WAP. However, the lukewarm success of WAP, combined with the high prices paid for 3G licenses, are starting to prompt people to whisper that 3G may not be the success everyone expected. For example, Professor Peter Cochrane, until recently head of British Telecommunications research labs, was quoted as not being optimistic about 3G ever becoming a major force in the UK as it will end up being both too expensive and too complex.

The other technology area is hybrid vehicles. In this issue we focus on the US Government's work in the Partnership for a New Generation of Vehicles' (PNGV) on electrical and electronic innovations, while in the next issue we will take a close look at Ford's zero emission P2000 fuel cell vehicle. The VTS itself is also active, with the Electric Vehicle/Hybrid EV Committee being

reestablished under Professor Mark Ehsani (see page 41). However, as reported by our Senior Editor Bill Fleming, hybrid vehicles are getting a lukewarm reception in the marketplace, and Lave and MacLean, writing in the March 2001 issue of IEEE Spectrum, suggest that there is currently no economic case for using hybrid vehicles.

Both hybrid vehicles and mobile data are examples of high technology innovations which fulfill a need that perhaps the customer does not realise they have yet. One of the difficulties WAP faces is that it is often sold as the Internet on your mobile. As Barry Goodstadt pointed out in VTC in Boston (VTS News, Feb. 2001), we all like fast connections and wide screens. The same is true in the automotive field – hybrid vehicles are not the same as IC vehicles, but like WAP, the technology does fulfil a need.

Which brings us to i-mode. The situation in Japan is different because they have got the marketing right. Helped by a lower home PC penetration rate, rather than trying to turn a phone into an Internet access point to compete with a PC, they focus on the innovations which can be undertaken in the format. i-mode users can now correspond with virtual lovers, while GSM text messaging by teenagers is spawning a new shortened language like telegrams did at the beginning of the last century. Both hybrid vehicles and WAP can have a good future, but the marketing must match the technology.

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Feature Articles in the May Issue

i-mode

Kei-ichi Enoki, NTT DoCoMo

In the first of our articles on mobile data in current cellular systems describes i-mode. Since its launch only a little over two years ago, NTT DoCoMo's i-mode service has grown to have more than 20 million customers, making it a benchmark for future cellular data provision, including 3G. In this article, we interview Mr. Kei-ichi Enoki, Managing Director of the Gateway Business Department to ask about i-mode, the services it provides and future plans for the system.

WAP

Mjumo Mzyece, University of Strathclyde

Our second article gives an overview of Wireless Application Protocol (WAP). The article describes the background and motivation for WAP, before going on to outline some of the basic technical details of WAP technology. Several examples of WAP applications and services that have either already been deployed or could be deployed are described. Finally, there is a brief description of a few factors that could impact WAP's bid to become the global standard for wireless applications and services.

Metro-North Railroad Telecommunications Infrastructure Project

R. Wayne Staley, Metro-North Railroad & Stephen Weiss, Clifton, Weiss & Associates, Inc.

Metropolitan Transportation Authority Metro-North Railroad (MTA MNR) is one of the largest commuter lines in the United States, providing more than 200 000 customer trips each weekday and some 62,000,000 trips per year.

MTA MNR has an existing voice and data communications infrastructure consisting of older fiber optic equipment, copper cable plant and leased lines used for voice and data transmission services that are central to the day-to-day operations of the Railroad. The existing infra-structure has exceeded its useful service life, and in some cases reliability of certain network elements is poor.

To accommodate existing and projected voice and data communications requirements of the railroad a hybrid telecommunications network has been engineered combining several widely deployed technologies.

The network design is standards-based and provides a scalable platform that will provide a migration path for the future.

This paper focuses upon the design process used at MNR and the rationale behind key decisions reached by the design team that led to the selection of the technologies and topologies utilized in this novel hybrid network.

Power Electronics and Electric Machinery Innovations — U.S. Government's Role in PNGV

Donald J. Adams, Oak Ridge National Laboratory

The U.S. Government plays an important role in the Partnership for a New Generation of Vehicles' (PNGV) electrical and electronics technologies with a program consisting of high-risk research and development (R&D) projects. The Department of Energy (DOE) plays the largest role in supporting these technologies to specifically address automotive needs.

DOE has three Automotive Integrated Power Module (AIPM) contractors and two Automotive Electric Motor

Drive (AEMD) contractors working to become viable suppliers for PNGV. Materials development projects are working to improve materials and devices needed in automotive motors and drives, such as permanent magnets, capacitors, sensors, connectors, and thermal management materials. Advancements in inverters, controls, and motors and generators conducted at DOE's national laboratories are also presented.

Regular Columns in the May Issue

Automotive Electronics

Bill Fleming, Senior Editor

These are the items covered in the Automotive Electronics column in the May 2001 VTS News. Please see the printed version for the full article.

- In-Vehicle Navigation Systems Consumer Satisfaction
- Telematics Products Pre-Tested For Distraction
- Mobile Phones Provide Data for Traffic Prediction
- Track Your Own Car — No Matter Who Is Driving
- Harsh Reality for Electric Cars in California
- Interesting New R&D Devices
 - 1 3-Axis Accelerometer
 - 2 Micro Turbine Generator
 - 3 Micro Gas Analyzer

Mobile Radio

Javier Gozalez, Senior Editor

These are the items covered in the Mobile Radio column in the May 2001 VTS News. Please see the printed version for the full article.

- FCC & US mobile market
- Technology and research news
- M-commerce and location-based services
- Forums activities
- Wireless LAN
- 3GSM World Congress
- 3G roll-out
- Qualcomm
- Satellite mobile communications
- Mobile phones and health
- Wireless industry forecasts
- Spectrum licenses
- WAP & i-mode
- Bluetooth news
- Other news

Transportation Systems

Harvey Glickenstein, Senior Editor

These are the items covered in the Transportation Systems column in the May 2001 VTS News. Please see the printed version for the full article.

- The first stage of the Newark-Elizabeth Rail Link (NERL) is under design.
- The Long Island Rail Road (LIRR) has advertised a Request for Information for Communications Based Train Control (CBTC)
- Two different units of New York's Metropolitan Transportation Authority (MTA) have ordered new equipment of Bombardier
- The Italian State Railways (FS) have awarded a contract for up to 200 new trainsets to Alstom
- The Minneapolis Metropolitan Council has ordered 18 low floor light rail vehicles for the Hiawatha Corridor Light Rail system
- The TGV Méditerranée is scheduled to open for revenue service in June 2001
- Shanghai signed a contract in January with the German Consortium Transrapid for a line linking the city with the new international airport at Pudong
- France and Italy have agreed to build a new tunnel under the Alps in order to provide high speed rail service between Lyon and Turin

Standards

Dennis Bodson, Senior Editor

These are the items covered in the Transportation Systems column in the May 2001 VTS News. Please see the printed version for the full article.

- VTS Standards On-line Subscription Available
- GSM-R - The new European Standard for Railway Communication Technology
- ITU Moving Quickly on the Convergence of 3G Mobile Networks
- Better Avalanche Beacons on the way...
- Public Safety Organizations Advance Work in a Global Partnership with Industry
- UWC-136 Update Approved For Inclusion In ITU-R Recommendation

Chapter News & Meetings

Gaspar Messina, Senior Editor

Japan

Dr. Tadashi Matsumoto held weekly, periodic work team administrative meetings, in preparation for the Spring Vehicular Technology Conference 2000 in Japan. Each meeting was attended by 20 IEEE members.

February 17-19, 2000, Dr. Tadashi Matsumoto chaired a Joint Technical VTS meeting with the Institute of Electronics, Information and Communication Engineers in a Mobile Communication Workshop setting, wherein 80 papers were presented. The attendees were 60 including 30 IEEE members.

May 15-18, 2000, VTS Japan hosted the VTC 2000 Spring Conference. Dr. Tadashi Matsumoto, VTS Japan Chapter Secretary and one of the principal Conference Organizers, was responsible for approximately 500 papers being presented. The attendees were approximately 1000 of which approximately 800 were IEEE members.

May 19, 2000, Dr. Tadashi Matsumoto arranged the VTC 2000 - Spring Technical Tours in conjunction with Yokosaka Research Park R&D Committee to visit the Yokosaka Research Park and the T R Maglev Test System. The attendees were 100, all IEEE members.

On December 14, 2000, Dr. Ryoji Kawasaki on behalf of the Institute of Electrical Engineers of Japan presented a paper entitled: "A study on Communication Networks and Information Technologies for the Future of ITS". The attendees were approximately 30.

3rd Generation Infrastructure and Services

Last call for this event being run by the joint Vehicular Technology Society/ Aerospace and Electronic Systems Society chapter in Greece. The Symposium runs from 2-3 July 2001 in Athens, Greece. For further details, contact Mrs. Penelope Koutroubi (email: piko@egnatia.ee.auth.gr) or see their web site: <http://newton.ee.auth.gr/3GIS/>

Denmark

A new chapter has been formed in Denmark (Æblekrogen) under the chairmanship of Tom Høholdt (tom@mat.dtu.dk).

Benelux

Luc Vandendorpe (vdd@tele.ucl.ac.be) is the new chairman of the Benelux chapter, taking the position over from Professor Ramjee Prasad, who has now moved to Aalborg University in Denmark.

Note to VTS Chapters

VTS Chapters world-wide are eligible to receive \$100.00 U.S. at the end of the calendar year for submitting L-31 Meeting Attendance Forms reflecting their Chapter's periodic meeting to VTS Chapter Activities Chairman.

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VTS News

Transactions in Vehicular Technology Ranked First in Field

The Vehicular Technology Society's Transactions on Vehicular Technology was ranked first in its field in the most recent IEEE 1999 Journal Citation Report. The study conducted by the Institute of Scientific Information™ (ISI) ranked 205 electrical engineering periodicals on the number of times they were cited in scientific literature. The IEEE as a whole recorded its best journal and magazine citation performance ever in the category of electrical engineering and related technologies.

The most highly cited IEEE journal, ranked second overall, was Proceedings of the IEEE, and in total nine of the top ten publications belong to the IEEE. Other journals ranked first in their field included Aerospace and Electrical Systems and Transactions on Microelectromechanical Systems.

Intelligent Transportation Systems Data Registry

IEEE Standards has released the Intelligent Transportation Systems Data Registry, a centralized dictionary for all formally specified ITS terms and

messages. It currently contains data elements and concepts from the Traffic Management Data Dictionary (TMDD), Transit Communications for ITS Profiles (TCIP), and the National Transportation Communications for ITS Protocol (NTCIP). The primary objective of the registry is to support the interchange and reuse of data by recording unambiguous definitions of the data concepts.

As part of the inauguration of this new registry, subscription fees for access to the ITS DR will be waived in 2001. For more information and to access the ITS DR, visit: <http://standards.ieee.org/regauth/its/index.html>

IEEE VTS Propagation Committee

The mission of the IEEE VT-S Propagation Committee is to promote effective exchange of information concerning propagation measurement and modeling for wireless communications system design. To this end, the committee has established both an Internet mailing list (which has grown to nearly 400 subscribers, including many well known members of the community) and a website devoted to propagation issues (which has received over 5,700 visits since it was unveiled).

The mailing list has proven to be a very effective way to poll those active in the field concerning proposed committee activities and initiatives. Based on discussions initiated via the mailing list, the Committee plans to organize and host a special issue of IEEE Transactions on Vehicular Technology concerning Wireless System Planning Tools with publication slated for late 2002.

For more information concerning the committee and its activities, please contact committee chair Dr. Dave Michelson <dmichelson@ieee.org> or visit the Propagation Committee's website at <http://propagation.vtsociety.org/>

*David G. Michelson,
Propagation Committee Chair*

Opportunities for New VT Chapters

Are you benefiting fully from your membership in VTS?

Part of the benefit can be the opportunity to network with other members in your area at local meetings, to bring in speakers on topics of interest, and to host seminars or even invite annual conferences to your section's location.

What is required to form a society chapter?

If there are at least 12 VT Society members, other than students or affiliates, in the section, a new chapter can be formed. If a joint chapter is to be formed from members of societies having similar interests, a total of 12 members is still required, but only at least 3 members of each forming Society must be included in the signatures on the petition to the local section. The organizer must be of member, Senior Member, or Fellow grade, but the other society members signing can include also Associate Members.

How can we identify the other VTS members in our locale?

Obtain lists of Society members holding the grades of Associate, Member, Senior Member, and Fellow within your Section. The Section has access to the Membership Information Program (SAMIEEE). The Section Chair can assist you. IEEE Regional Activities can generate a list using the IEEE List Management System. The contact information is as follows:

IEEE Regional Activities
Section/Chapter Support
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: +1 732 562 5518
Fax: +1 732 463 3657
E-Mail: d.mcclelland@ieee.org

Questions about chapters of the Vehicular Technology Society can be sent to the VT Chapters Coordinator, Gaspar Messina, at gmessina@fcc.gov.

Is there a special form for the petition to form a chapter?

IEEE Section/Chapter Support has a kit that they will send to new Chapter organizers which contains several helpful documents including the "Petition for the Establishment of an IEEE Society Chapter". The request for the kit can be sent to:

IEEE Regional Activities
Section/Chapter Support
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: +1 732 562 5513
Fax: +1 732 463 9359
E-Mail: p.kovacs@ieee.org

What is the procedure to form a joint chapter?

Contact the Chair of a technically-related Chapter already in existence to see if there is interest in forming a joint Chapter. It is also recommended that this activity be done on a multiple Society basis, as the work needed is essentially the same. If there is interest, advise the Chapter Chair that when forming a new joint Chapter a member of the Section Executive Committee must write a letter to IEEE Regional Activities approving the joint chapter, but in the case of Chapter expansion, the current Chapter Chair must indicate whether the current Chair will remain in office. It is not necessary to complete a petition to expand the sponsorship of an existing Chapter.

You will find that making personal contacts in the given location can enlist assistance to possibly help with the Chapter formation.

After the new chapter is approved, you can get financial assistance to cover startup costs by a letter request to the VTS president, through the chapters coordinator.

The <http://www.ieee.org/organizations/tab/ciaguidelines.html>, website, has further tips on forming a chapter.

Electric & Hybrid Electric Vehicles Committee

Professor Mark Ehsani, P. E. and Fellow of the IEEE has taken over chairmanship of the Electric & Hybrid Electric Vehicles Committee. Professor Ehsani is Director of the Advanced Vehicle Systems Research Program at the Department of Electrical Engineering at Texas A&M

University. He has been active over a number of years within the Vehicular Technology Society in vehicle power and propulsion areas, for example by organizing a session on Electric and Hybrid Electric Vehicles in the Spring 1999 Vehicular Technology Conference in Houston, Texas. He

has served as the Associate Editor for Transactions in Vehicular Technology on Electric and Hybrid Electric Vehicles, where he has encouraged papers in the area of electric and hybrid power train systems.

As Professor Ehsani points out, electrotechnology is revolutionizing the automobile, not only in information processing, signal processing and controls, but also in electric power system, actuation, and propulsion. Some prominent examples of the later are electric vehicles and hybrid electric vehicles, which are emerging as the next generation cars. Some less well known examples are steering by wire, brake by wire, active suspension, 42V power system, integrated starter generator, and electromagnetic engine controls. Most of these systems are closely coupled with the computer controls and information processing systems of the vehicle. He plans to use the Electric & Hybrid Electric Vehicles Committee to provide a focus for such topics.

Currently, these technologies are scattered among several professional societies. These include Society of Automotive Engineers (SAE), IEEE Industry Applications Society (IAS), IEEE Power Electronics Society (PELS), IEEE Industrial Electronics Society (IES), and IEEE Power Engineering Society (PES).

According to Professor Ehsani, there is no clear scope and cohesion for the topics that each society will present. All that we can observe is that the number of papers, short courses and sessions on vehicle power related papers are expanding in these societies and their scopes are shifting. It would make sense to bring these vehicle power and propulsion related papers and interests within VTS, so that electrical engineers could find deep and specialized papers on these topics in one place.

Such a service would be of interest to engineers in automotive manufacturing and supplier industries, such as Ford, GM, Daimler Chrysler, Delphi, Visteon, Dana, Bosch, Valeo, Siemens, and many others. It would also be of interest to universities, where research and education in automotive electrical systems is a topic of specialization. These include Texas A&M University, MIT, University of

Maryland, University of Tennessee, Ohio State University, West Virginia University, University of California at Davis, Virginia Tech, Pennsylvania State University, and others.

Some examples of technical topics that Professor Ehsani would like to consider include:

- ◆ Electric and Hybrid Electric Propulsion Systems,
- ◆ Vehicle Electric Power Systems,
- ◆ Vehicle Load Systems,
- ◆ Vehicle Power Management and Control Systems,
- ◆ Vehicle Fuel Cells,
- ◆ Direct Engine Injection Systems,
- ◆ Electric Engine Variable Valve Control,
- ◆ Engine Starter/Generators,
- ◆ Vehicle Energy Storage Systems,
- ◆ Vehicle Actuators and Motor Drives,
- ◆ Vehicle X by Wire Systems,
- ◆ Integration of Vehicle Power, Control and information Systems.

Some initial thoughts on these matters include a number of possible activities:

- ◆ Specialized paper sessions in Vehicular Technology Conference
- ◆ Solicitation of high quality papers for Transactions on Vehicular Technology
- ◆ A special issue of the Transactions on Vehicular Technology the above topics
- ◆ Tutorial sessions in VTC
- ◆ Joint sponsorship of conferences and workshops with SAE, IAS, IES, PES, PELS and other interested societies
- ◆ Expansion of VTS Distinguished Speakers on the above topics

To assist in these developments, Professor Ehsani is looking for volunteers to serve on the Committee. If you are interested, he can be contacted on ehsani@ee.tamu.edu, or at the Department of Electrical Engineering, Texas A&M University, College Station, Texas 77843.

9th February 2001 VTS Board of Governors Meeting Report

George F McClure, VTS Board Member

Summary

The main focus of the board meeting was on conferences and periodicals. The committee on electric and hybrid electric vehicles has been reactivated by Dr. Mark Ehsani of Texas A&M University. A new medal is being considered to upgrade the stature of the Avant-Garde award. Current emphasis is being placed on membership, and on the formation of new chapters in Regions 8-10. VTS membership at the end of 2000 stood at 5,511.

Details

Eighteen were in attendance at the board meeting, as Past President Kent Johnson reported that the five-year review of the Society and its publications by the Technical

Activities Board's review committee went very well, and the Vehicular Technology Society was pronounced in good health. The VTS charter for mobile communications, including mobile communications, vehicle electronics, and land transportation, was reaffirmed, although the Personal Communications magazine published by the 55,000-member IEEE Communications Society plans to add "Wireless" to its name.

Treasurer Charles Backof noted that the VTS is in sound financial condition, although last year's return from the IEEE long-term investment fund was only one percent. It is essential that past conferences close out their accounts promptly, because a financial penalty is levied against the Society quarterly beginning a year after the conference dates for conferences that have not closed out their books and submitted their final reports.

Dr. Essam Sourour, who has served faithfully as VTS Secretary for the past four years, submitted his resignation owing to relocation and a change in employment. His service was applauded with gratitude. Dr. Eric Wang from Ericsson will be the new secretary.

Dr. Mark Ehsani was introduced as the new chair for the Committee on Electric and Hybrid Electric Vehicles. He served previously on the board for the Industry & Applications Society when the Power Electronics Society was born. Those two societies, with 12,185 and 6,092 members, respectively, now hold joint technical conferences. The 4,800-member Industrial Electronics Society is also active in the same technologies. Dr. Ehsani is looking for VTS members interested in working on the committee. He can be contacted by e-mail at ehsani@ee.tamu.edu.

Standards for fuel cells are covered by IEEE Standards Coordinating Committee 21. This was an area identified by George McClure as one where VTS had an interest, as fuel cells are being developed for mobile and even for personal communications applications. Dr. Ehsani will add fuel cell standards to the activities covered by his committee.

Conference Coordinator Mel Lewis reported that a change in venue for VTC-01 Spring, from Tel Aviv to Rhodes, was accomplished without penalty. Ten authors, out of 700, have cancelled their papers.

As our conferences continue to grow, the paper conference records become more unwieldy and more attendees prefer to receive the papers in CD-ROM format. The Board established a policy that the paper records would be available only to those who request them with pre-conference registration. All others ordering a conference record will receive the CD-ROM version. Those who pre-order the paper copy will receive it at the conference with their other registration materials. At the option of the conference committee, a digest of abstracts of papers could be distributed to attendees along with the CD-ROM, for ease of reference while attending technical sessions.

VTC-02 Spring, in Birmingham, Alabama, will include a tour of the nearby Mercedes-Benz assembly plant. Mel Lewis reported that a new hotel has been selected, the downtown Sheraton Birmingham, for this conference.

President J. R. Cruz appointed Board member Gordon Stuber to chair the Fellows committee. Sam McConoughey will serve on the committee. Another Fellow is sought for the committee.

The Propagation Committee is planning a special issue of the VT Transactions on Wireless System Planning Tools. A call for papers will be issued later this year.

President J.R. Cruz noted that the backlog of papers awaiting publication in the VT Transactions has been eliminated. Papers approved for publication are printed in the next issue that is published. This is an advantage to VTS authors, compared with some other societies where a publication delay of more than two years may be encountered.

Sam McConoughey presented a history of the Avant-Garde medal, first awarded to Jim Evans of the Michigan

State Police for pioneering work in two-way mobile radio. This award is intended to recognize pioneers in our field. A new medal and/or plaque for the award was proposed. Ideas to broaden and formalize the award criteria are solicited: to recognize years of service to VTS by corporate industry supporters as well as by individuals. Patents awarded and papers published could be among the criteria for individuals. Awards chair Ray Trott will work with Sam McConoughey to flesh out the ideas for later presentation to the board. President Cruz and Ray Trott will prepare a specific proposal for an expanded overall VTS awards program.

A discussion of a follow-on to the earlier VTS-sponsored videotape about the Intelligent Vehicle-Highway System resulted in board approval for Bob Barrett, VTS delegate to the Intelligent Transportation System Council, to pursue development of a new videotape on ITS, perhaps cost-shared with other members of the 17-society ITS Council.

Bob Mazzola reported that a new technology area, "telematics," received considerable attention at the Convergence 2000 conference in Dearborn. An example is the GM On-Star system, where Qualcomm is developing a capability to locate a vehicle within five meters using a cell phone. Anil Kripalani is heading development of a technical committee on telematics, at the direction of President Cruz. Members interested in serving on this committee should contact Anil (akripalani@qualcomm.com).

George McClure is coordinating the up-date of our list of technical experts for contact by the media. The technical areas covered include wireless, vehicle electronics, telematics, ITS, and other land (rail) transportation. Members interested in participating are requested to contact George (g.mcclure@ieee.org).

A new initiative has expanded the focus of the Aerospace Policy Committee of IEEE-USA to include land and marine transportation. VTS past-president Eric Schimmel has agreed to represent VTS on this committee, which advocates technology policy for the U.S. government. Other areas of interest include air transportation and the development of civil uses of space. Land transportation improvements in the United States will benefit from the Intermodal Surface Transportation Efficiency Act (ISTEA), funded heavily in the last Congress.

Membership development and the establishment of chapters are dual initiatives receiving VTS emphasis. Anil Kripalani is charged with new member recruitment while George McClure is assisting Gaspar Messina in chapter development, with priority in Regions 8, 9, and 10. Chapters are sought now for the Finland and Germany sections, following the recent establishment of a joint chapter in Denmark. Details on the annual chapter activity competition, the distinguished speakers' program, and opportunities for chapter projects with support from VTS will be included in the new VTS Chapters Best Practices manual, now being prepared, as well as being listed on the VTS web site.

VTC2001-Fall in Atlantic City

Atlantic City will host the Fall Vehicular Technology Conference will be held from the 7th to the 11th of October in the Atlantic City Convention Center, with accommodation and some events in the Sheraton Atlantic City Convention Center Hotel.

The theme of the conference is 'Mobile Technology for the Third Millennium', and over three days of technical sessions on the 8th, 9th and 10th of October approximately 700 papers and posters will be presented on mobile radio technologies such as antennas and propagation, wireless access, transmission, networks, applications and mobile satellite, as well as transportation technologies such as intelligent transportation systems and vehicular electronics. Fifteen invited papers on topics of Vehicle Systems will be presented in two special sessions on Monday. In a new feature this year, the last morning of the conference will be devoted to workshops of 'hot' topics to supplement the technical presentations. The conference begins on Sunday 7th October with a day of tutorials, which are becoming an increasingly popular way of keeping up with the latest developments in our fast-moving field.

Atlantic City is conveniently located only one hour from Philadelphia, and NJ Transit offers a rail service from the North East corridor. The Atlantic City terminus is connected to the convention center making transportation

by train convenient. Those coming by air have a choice of flying to the city directly, or flying to Philadelphia and travelling on from there by convenient rail service from the airport. Advance registration is available until the 30th of August 2001. The cost of registration for members is \$500 (\$575 for non-members), rising to \$575 and \$635 respectively from the beginning of September. Registration includes lunches and the banquet. Students and life members may attend the conference for the reduced fee of \$75.

Atlantic City is a world famous vacation city that offers a wide range of activities and boasts top-quality entertainment. It is family oriented as well as a gaming mecca and has affordable accommodations. It is only one hour from Philadelphia, and is accessible to Baltimore, New York and Washington, DC.

Further details of registration and the conference programme itself can be found on the VTC2001-Fall web site, <http://www.fallvtc2001.org>, which also contains useful information on Atlantic City itself. If you can't wait until October, it is possible to take a virtual tour of the convention center at <http://vc0.tscentral.com/vt/accc/> Additional information on the locality is available at the state government's official site, <http://www.atlanticcitynj.com>

Avant Garde Award

The origins of the VTS date back to 1949, when the Institute of Radio Engineers (IRE) formed the Professional Group on Vehicular Communications, led by James Evans of the Michigan State Police, with a Chapter in Detroit, MI with 184 members. The First IRE - Professional Group on Vehicular Communications (PGVC) conference was held in Detroit, MI at the Book Cadillac Hotel. Approximately 35 persons attended to hear 8 technical presentations, and visit about a half-dozen exhibitors.

To commemorate this event, the Avant Garde award was created in 1980 to recognize the founders of the then IRE Professional Group on Vehicular Communications (PGVC) which later became the IEEE VTS. The first Avant Garde awards were made at our conference in Detroit that year. It was later agreed that the award be made permanent, to be awarded to those members of the Vehicular Technology Society who should be recognized for their work, leadership and other contributions to VTS and its activities.

Do you know anyone who fits this description? If so, please fill out the form on the opposite page and send it to Awards Committee Chairman Ray Trott, to begin the process whereby your nominee will receive recognition from peer members in the Vehicular Technology Society.

The award itself consists of a certificate that states: "Be it hereby known that The Institute of Electrical and Electronics Engineers, Inc., Vehicular Technology Society, Proudly recognizes (name of award recipient) for the pioneering leadership and continuing contributions in promoting new technology in the field of vehicular communications and electronics and hereby designates the aforementioned as a member of its AVANT-GARDE thus bestowing the Honor and Respect of this Society in grateful recognition thereof, on (date) by its officers (signed by the President and the Secretary)."

In addition, the recipient receives a pewter medal on which are depicted a hand holding shafts of lightning, a lamp, an ancient microscope and a diagram of electrons flowing around a nucleus. Attached to the medal is a blue and white ribbon with the words 'IEEE VTS AVANT-GARDE' in gold letters and a pin for attaching to one's suit or dress.

Surely you know someone in the Vehicular Technology Society who is deserving of recognition by becoming a member of the Avant-Garde. Take the time to fill out the form on the opposite page and send it to Raymond C. Trott. Trott Communications Group 1425 Greenway Drive, Suite 350 Irving, TX 75038.

Vehicular Technology Society

AVANT GARDE AWARD RECOMMENDATION

Nominee (Must be VTS member)

Name _____

Address _____

City, State, Zip _____

Telephone No. Business _____

Telephone No. Home _____

Title _____

Company _____

Nominator

Name _____

Address _____

City, State, Zip _____

Telephone No. Business _____

Telephone No. Home _____

Signature & Date _____

Justification for Award: (Attach printed or typed text) _____

VTS Contributions: _____

Action by VTS Awards Committee

Approved Yes No Returned for More Justification

By _____ Chairman, Awards Committee

Date: _____

Conferences of Interest

The following table shows VT-06 sponsored and co-sponsored conferences as well as related conferences not sponsored by the Society. While every attempt was made to ensure accuracy, you should contact the respective conference committee to confirm date and location.

DATE	CONFERENCE	LOCATION	WEB PAGE
20-22 May 2001	2001 Radio Frequency Integrated Circuits Symposium	Phoenix, AZ	http://www.ims2001.org/rfic
6-8 June 2001	3Gwireless 2001	San Francisco, CA	http://delson.org/3gwireless01
11-15 June 2001	ICC2001	Helsinki, Finland	http://www.icc2001.com
8-13 July 2001	APS International Symposium / URSI Radio Science Meeting	Boston, MA	http://www.ieeeaps.org/2001APSURSI/
15-18 August 2001	3rd Int. Workshop on Mobile Wireless Comms Networks	Recife, Brazil	http://www.cin.ufpe.br/~mwcn2001/
19-22 August 2001	RAWCON 2001 Radio and Wireless Conference	Boston, MA	mailto:heutmaker@lucent.com
25-29 August 2001	ITSC 2001	Oakland, CA	http://www.ewh.ieee.org/tc/its/2001/
9-12 September 2001	WPMC'01	Aalborg, Denmark	http://www.wpmc01.org
25-28 September 2001	IVEC2001 Veh. Electronics Conf.	Tottori City, Japan	http://www.kankyo-u.gr.jp/
26-28 September 2001	3rd Int. Workshop on Multi-Carrier Spread Spectrum	Oberpfaffenhofen, Germany	http://www.dlr.de/kn/kns/mcs2001
30 September – 3 October 2001	PIMRC 2001	San Diego, CA	http://www.pimrc2001.org
7-11 October 2001	VTC 2001-Fall	Atlantic City, NJ	http://www.fallvtc2001.org
28-31 October 2001	MILCOM 2001	Washington, DC	http://www.milcom.org/2001
14-16 November 2001	ISCIT 2001	Chiang Mai, Thailand	http://www.kmitl.ac.th/~iscit/
25-29 November 2001	Globecom 2001	San Antonio, TX	http://www.globecom2001.com
20-24 January 2002	Int. Conf. on Micro Electro Mechanical Systems (MEMS)	Las Vegas, NV	mailto:kkcline@pmmconferences.com
26-28 February 2002	European Wireless 2002	Florence, Italy	http://www.ing.unipi.it/ew2002
28 April - 2 May 2002	ICC2002	New York, NY	mailto:d.kingston@comsoc.org
6-10 May 2002	VTC 2002-Spring	Birmingham, AL	http://www.ieee.org/vtc02spring
16-21 June 2002	APS International Symposium / URSI Radio Science Meeting	San Antonio, TX	http://www.ieeeaps.org/2002APSURSI/
2-5 September 2002	ISSSTA 2002	Prague, Czech Republic	http://www.ure.cas.cz/isssta2002
24-28 September 2002	VTC 2002-Fall	Vancouver, BC	mailto:bhargava@enr.UVic.CA
Spring 2003	VTC 2003-Spring	Seoul, Korea	mailto:m.lewis@ieee.org
Fall 2003	VTC 2003-Fall	Orlando, FL	mailto:m.lewis@ieee.org
Spring 2004	VTC 2004-Spring	Northern Italy	mailto:m.lewis@ieee.org

Conferences marked '✓' have open calls for papers as of 31 May 2001. This list is based upon the conference calendar at our web site, which is updated more frequently than this list can be. To access it go to the following URL: <http://www.vtsociety.org/>, then click on "Conference List" in the left frame.

Corrections and additions to this list are most welcome. We are particularly interested in adding listings for Automotive and Transportation conferences. Please send corrections and additions to Tom Rubinstein at t.rubinstein@ieee.org.